Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An RNA ~~nucleic acid~~ aptamer which binds to the coagulation pathway factor IXa, the RNA aptamer comprising a secondary structure comprising a first stem region, a first loop region, a second stem region, a second loop region, and a third loop region, wherein the first loop region comprises a consensus sequence comprising NNAUA, wherein N is selected from the group consisting of A, U, G, and C.

2 -3 (Canceled)

4. (Previously presented) The aptamer of claim 1, having a dissociation constant of about 20 nanomolar (nM) or less.

5. (Previously presented) The aptamer of claim 4, wherein the dissociation constant ranges from about 400 pM to about 10 nM.

6. (Previously presented) The aptamer of claim 4, wherein the dissociation constant ranges from about 100 pm to about 10 nM.

7-11. (Canceled)

12. (Previously presented) The aptamer of claim 1, which comprises at least one modified nucleotide.

13. (Currently Amended) An RNA aptamer comprising a nucleotide sequence selected from the group consisting of ~~SEQ ID NOs:1-22~~, SEQ ID NO:70 and SEQ ID NO:3, or a truncate thereof.

14. (Canceled)

15. (Previously Presented) The aptamer of claim 13, wherein the nucleotide sequence is SEQ ID NO: 3 or SEQ ID NO: 70.

16. (Canceled)

17. (Previously Presented) The aptamer of claim 13, wherein the sequence is SEQ ID NO:3 or a truncate thereof.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A pharmaceutical composition comprising a therapeutically effective amount of an RNA ~~nucleic acid~~ aptamer which binds to the coagulation pathway factor IXa, in a pharmaceutically acceptable diluent or vehicle, the RNA aptamer comprising a secondary structure comprising a first stem region, a first loop region, a second stem region, a second loop region, and a third loop region, wherein the first loop region comprises consensus sequence comprising NNAUA, wherein N is selected from the group consisting of A,U,G, and C.

21. (Withdrawn) A method of modulating the biological activity of a coagulation pathway factor, the method comprising: (a) administering to a warm blooded vertebrate host having coagulation pathway factor IXa or the equivalent in need thereof an effective amount of a nucleic acid aptamer to the coagulation pathway factor IX; and (b) modulating the biological activity of the coagulation pathway factor in the warm-blooded vertebrate through the administration of the aptamer in step (a).

22. (Withdrawn) The method of claim 21, wherein the administration is intravenous administration, intrasynovial administration, transdermal administration, intramuscular administration, subcutaneous administration, intraperitoneal administration, or topical administration to a blood vessel.

23. (Withdrawn) The method of claim 21, wherein the vertebrate is a mammal.

24. (Withdrawn) A method of treating cardiovascular disease in a warm blooded vertebrate host, the method comprising administering an effective amount of a nucleic acid aptamer to the coagulation pathway factor IXa to a vertebrate subject suffering from cardiovascular disease, whereby cardiovascular disease in the vertebrate subject is treated.

25. (Withdrawn) The method of claim 24, wherein the administration is intravenous administration, intrasynovial administration, transdermal administration, intramuscular administration, subcutaneous administration, intraperitoneal administration, or topical administration to a blood vessel.

26. (Withdrawn) The method of claim 24, wherein the vertebrate is a mammal.

27-71. (Canceled)

68. (Canceled)

69. (Canceled)

70. (Canceled)

71. (Canceled)

72. (Canceled)

73. (Currently Amended) The aptamer of claim ~~72~~ 12, wherein the aptamer comprises at least one 2'-modified ~~ribonucleotide~~ nucleotide.

74. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-halo-modified nucleotide.

75. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-fluoro-modified nucleotide.

76. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-O-alkyl-modified nucleotide.

77. (Previously presented) The aptamer of claim 12, wherein the aptamer comprises at least one 2'-methoxy-modified nucleotide.

78. (Previously presented) The aptamer of claim 12 wherein at least one cytidine is 2'-deoxy-2'-fluorocytidine.

79. (Previously presented) The aptamer of claim 12 wherein at least one uridine is 2'-deoxy-2'-fluorouridine.

80. (Previously presented) The aptamer of claim 12 wherein all uridines are 2'-deoxy-2'-fluorouridine.

81. (Previously presented) The aptamer of claim 1, that comprises a 3' chain terminator.

82. (Previously presented) The aptamer of claim 1, that comprises about 15 to 100 bases

83. (Previously presented) The aptamer of claim 1, that has less than about 100 bases.

84. (Previously presented) The aptamer of claim 1, that has less than about 40 bases.

85. (Previously presented) The aptamer of claim 1, that comprises a covalently linked carrier.

86. (Previously presented) The aptamer of claim 85 wherein the carrier is a soluble polymer.

87. (Previously presented) The aptamer of claim 85 wherein the carrier is a biodegradable polymer.

88. (Previously presented) The aptamer of claim 85 wherein the carrier is polyethylene glycol.

89. (Previously presented) The aptamer of claim 1 additionally comprising covalently linked cholesterol.

90. (Canceled)

91. (Currently Amended) The aptamer of claim 1, wherein the first stem region ~~comprising~~ comprises at least about 5 nucleotides at a 5' end of the aptamer that form base pairs with at least about 5 nucleotides at a 3' end of the aptamer.

92-117 (Canceled)

118. (Previously presented) The aptamer of claim 13, comprising SEQ. ID. NO: 3.

119. (Previously presented) The pharmaceutical composition of claim 20 wherein the composition is in a unit dose.

120. (Canceled)

121. (Withdrawn) The method of claim 21, wherein the aptamer comprises at least one ribonucleotide.

122. (Withdrawn) The method of claim 22, wherein the aptamer comprises at least one deoxyribonucleotide.

123. (Withdrawn) The method of claim 21, wherein the aptamer comprises at least one modified nucleotide.

124. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one ribonucleotide.

125. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one deoxyribonucleotide.

126. (Withdrawn) The method of claim 24, wherein the aptamer comprises at least one modified nucleotide.

127. (Withdrawn) The method of claim 23 wherein the mammal is a human.

128. (Withdrawn) The method of claim 21 wherein the vertebrate is a mammal.

129. (Withdrawn) The method of claim 128 wherein the mammal is a human.

130. (Withdrawn) The method of claim 24, wherein the administration is by coating a blood vessel tissue with the aptamer.

131. (Withdrawn) The method of claim 24 wherein administration is via a catheter.

132. (Withdrawn) The method of claim 25 wherein the administration is intravenous administration.

133. (Withdrawn) The method of claim 25 wherein the administration is subcutaneous administration.

134. (Withdrawn) The method of claim 25 wherein the administration is intrasynovial administration.

135. (Withdrawn) The method of claim 21, wherein the administration is by coating a blood vessel tissue with the aptamer.

136. (Withdrawn) The method of claim 21 wherein administration is via a catheter.

137. (Withdrawn) The method of claim 22 wherein the administration is intravenous administration.

138. (Withdrawn) The method of claim 22 wherein the administration is subcutaneous administration.

139. (Withdrawn) The method of claim 22 wherein the administration is intrasynovial administration.

140. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for atherosclerosis.

141. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for thromboses.

142. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for hypertension.

143. (Withdrawn) The method of claim 21 wherein the host is in need of treatment for cardiac infarction.

144. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is a disease in which thrombisis plays a role.

145. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is atherosclerosis.

146. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is thromboses.

147. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is hypertension.

148. (Withdrawn) The method of claim 24, wherein the cardiovascular disease is cardiac infarction.

149. (Withdrawn) The method of claim 24 comprising contacting factor IXa with an aptamer to factor IXa.

150. (Withdrawn) The method of claim 21, wherein the aptamer is to IXa.

151. (Withdrawn) The method of claim 24, wherein the aptamer is to IX.

152. (Withdrawn) The method of claim 21, wherein the aptamer is to IX.

153. (New) The aptamer of claim 1, wherein the aptamer is selected from the group consisting of SEQ. ID. NOs. 1-22, or a truncate thereof.

154. (New) The pharmaceutical composition of claim 20, wherein the first stem region comprises at least about 5 nucleotides at a 5' end of the aptamer that form base pairs with at least about 5 nucleotides at a 3' end of the aptamer.

155. (New) The pharmaceutical composition of claim 20, wherein the aptamer is selected from the group consisting of SEQ. ID. NOs. 1-22, or a truncate thereof.

156. (New) An RNA aptamer comprising a nucleotide sequence at least 80% homologous to a nucleotide sequence selected from the group consisting of SEQ ID NO:70 and SEQ ID NO:3, or a truncate thereof.

157. (New) The aptamer of claim 156, wherein the aptamer comprises at least one modified nucleotide.

158. (New) The aptamer of claim 156, wherein the aptamer comprises at least one 2'-modified nucleotide.

159. (New) The aptamer of claim 156, wherein the aptamer comprises at least one 2'-halo-modified nucleotide.

160. (New) The aptamer of claim 156, wherein the aptamer comprises at least one 2'-fluoro-modified nucleotide.

161. (New) The aptamer of claim 156, wherein the aptamer comprises at least one 2'-O-alkyl-modified nucleotide.

162. (New) The aptamer of claim156, wherein the aptamer comprises at least one 2'-methoxy-modified nucleotide.

163. (New) The aptamer of claim 156, wherein at least one cytidine is 2'-deoxy-2'-fluorocytidine.

164. (New) The aptamer of claim 156, wherein at least one uridine is 2'-deoxy-2'-fluorouridine.

165. (New) The aptamer of claim 156, wherein all uridines are 2'-deoxy-2'- fluorouridine.

166. (New) The aptamer of claim 156, that comprises a 3' chain terminator.

167. (New) The aptamer of claim 156, that comprises about 15 to 100 bases

168. (New) The aptamer of claim 156, that has less than about 100 bases.

169. (New) The aptamer of claim 156, that has less than about 40 bases.

170. (New) The aptamer of claim 156, that comprises a covalently linked carrier.

171. (New) The aptamer of claim 170, wherein the carrier is a soluble polymer.

172. (New) The aptamer of claim 170, wherein the carrier is a biodegradable polymer.

173. (New) The aptamer of claim 170, wherein the carrier is polyethylene glycol.

174. (New) The aptamer of claim 156, additionally comprising covalently linked cholesterol.

175. (New) The aptamer of claim 156, that comprises a 3' chain terminator.

176. (New) The aptamer of claim 156, that comprises about 15 to 100 bases

177. (New) The aptamer of claim 156, that has less than about 100 bases.

178. (New) The aptamer of claim 156, that has less than about 40 bases.

179. (New) The aptamer of claim 156, wherein the first stem region comprises at least about 5 nucleotides at a 5' end of the aptamer that form base pairs with at least about 5 nucleotides at a 3' end of the aptamer.

180. (New) A pharmaceutical composition comprising a therapeutically effective amount of an RNA aptamer which binds to the coagulation pathway factor IXa, the aptamer comprising a nucleotide sequence at least 80% homologous to a nucleotide sequence selected from the group consisting of SEQ ID NO:70 and SEQ ID NO:3, or a truncate thereof.

181. (New) The pharmaceutical composition of claim 180, wherein the composition is in a unit dose.